TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. 3749

In Re Application Of: **HAHN, W., ET AL**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
10/584,899	06/28/2006	NGUYEN, T.	278	2832	5032

Invention: **MAGNET POLE FOR MAGNETIC....**

COMMISSIONER FOR PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed on:
04/29/2010

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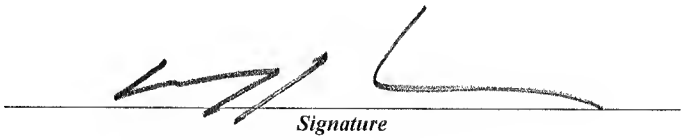

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Dated: **06/29/2010**

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UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Nguyen, Tuyen T. Art Unit: 2832 Docket No. 3749

In re:

Applicant: HAHN, Wolfgang

Serial No.: 10/584,899

Filed: June 28, 2006

BRIEF ON APPEAL

June 29, 2010

Commissioner for Patents
P O Box 1450
Alexandria, VA 22313-1450

This is a Brief on Appeal from the final rejection of Claims 3-6 and 10-13 by the primary Examiner.

REAL PARTY IN INTEREST

The real party in interest in this application is ThyssenKrupp Transrapid GmbH having a business address of Henschelplatz 1, 34127 Kassel, Germany.

RELATED APPEALS AND INTERFERENCES

There are no prior and pending appeals, interferences or judicial proceedings known to appellant, the appellant's legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

The original application was filed with Claims 1-6. During the prosecution, Claims 7-13 have been added and Claims 1,2 and 7-9 have been cancelled.

The applicant now contains Claims 3-6 and 10-13, and these claims are rejected.

STATUS OF AMENDMENTS

In this application the Final Action was issued on February 4, 2010.

After the final Office Action, no Amendments have been filed.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention as defined in Claim 10 is a magnetic pole for magnetic levitation vehicles. The magnetic pole has a core (301) acting as a cooling element. This is disclosed in lines 10-12 on page 2 of the specification and shown in Figures 1-3. The magnetic pole further has a winding (314) which is applied on the core (301) and having at least two disks (315, 316). This is disclosed in lines 2-5 on page 3 of the specification and shown in Figure 3. The disks (315, 316) are formed by conductor strips (306) wound in several individual layers (1...300) around the core (301). This is disclosed in lines 30-34 on page 3 of the specification and shown in Figure 1. The magnetic pole further has first insulating layers (310, 321) for electrically insulating the individual layers (1...300) radially against each other and against the core (301), and a second insulating layer (317) lying between the at least two disks (315, 316) for electrically insulating the disks (315, 316) axially against each other. The first insulating layers (310, 321) are disclosed in lines 34-36 on page 2 of the specification and shown in Figure 3, and in lines 17-19 on page 4 of the specification and shown in Figure 3, while the second insulation layer is disclosed in lines 13-15 on page 3 of the specification and shown in Figure 3. The conductor strips (306) of one disk are wound in an opposite sense with respect to the conductor strips of a neighboring disk around the core (301) and electrically connected to each other at the core (301) by way of a connecting line

(318). This is disclosed in lines 30-34 on page 3 of the specification and shown in Figures 1 and 3.

Second independent Claim 11 defines a magnetic pole for magnetic levitation vehicles, having a core (301) acting as a cooling element. This is disclosed in lines 10-12 on page 2 of the specification and shown in Figures 1-3. The magnetic pole further has a winding (314) which is applied on the core (301) and having at least two disks (315, 316). This is disclosed in lines 2-5 on page 3 of the specification and shown in Figure 3. The disks (315, 316) are formed by conductor strips (306) wound in several individual layers (1...300) around the core (301). This is disclosed in lines 30-34 on page 3 of the specification and shown in Figure 1. The magnetic pole further has first insulating layers (310, 321) for electrically insulating the individual layers (1...300) radially against each other and against the core (301), and a second insulating layer (317) lying between the at least two disks (315, 316) for electrically insulating the disks (315, 316) axially against each other. The first insulating layers (310, 321) are disclosed in lines (34-36) on page 2 of the specification and shown in Figure 3, and in lines 17-19 on page 4 of the specification and shown in Figure 3, while the second insulation layer is disclosed in lines 13-15 on page 3 of the specification and shown in Figure 3. It is also defined in Claim 11 that the insulating layers (1...300) have half a height (h) and twice a thickeness (d) as compared with a magnetic pole having only one

disk but substantially a same magnetic flux and space requirement. This is disclosed in lines 9-13 on page 3 of the specification and shown in Figures 2 and 3.

Third independent Claim 12 defines a magnetic pole having improved heat exchange for magnetic levitation vehicles. The magnetic pole has a core (301) acting as a cooling element. This is disclosed in lines 10-12 on page 2 of the specification and shown in Figures 1-3. The magnetic pole further has a winding (314) which is applied on the core (301) and having at least two disks (315, 316). This is disclosed in lines 2-5 on page 3 of the specification and shown in Figure 3. The disks (315, 316) are formed by conductive strips (306) wound in several individual layers (1...300) around the core (301). This is disclosed in lines 30-34 on page 3 of the specification and shown in Figure 1. The magnetic pole further has first insulating layers (310, 321) for electrically insulating the individual layers (1...300) radially against each other and against the core (301), and a second insulating layer (317) lying between the at least two disks (315, 316) for electrically insulating the disks (315, 316) axially against each other. The first insulating layers (310, 321) are disclosed in lines (34-36) on page 2 of the specification and shown in Figure 3, and in lines 17-19 on page 4 of the specification and shown in Figure 3, while the second insulation layer is disclosed in lines 13-15 on page 3 of the specification and shown in Figure 3.

Fourth independent Claim 13 defines a magentic pole for magnetic levitation vehicles, having a core (301) acting as a cooling element. This is disclosed in lines 10-12 on page 2 of the specification and shown in Figures 1-3. The magnetic pole further has a winding (314) which is applied on the core (301) and having at least two disks (315, 316). This is disclosed in lines 2-5 on page 3 of the specification and shown in Figure 3. The disks (315, 316) are formed by conductor strips (306) wound in several individual layers (1...300) around the core (301). This is disclosed in lines 30-34 on page 3 of the specification and shown in Figure 1. The magnetic pole further has first insulating layers (310, 321) for electrically insulating the individual layers (1...300) radially against each other and against the core (301), and a second insulating layer (317) lying between the at least two disks (315, 316) for electrically insulating the disks (315, 316) axially against each other. The first insulating layers (310, 321) are disclosed in lines 34-36 on page 2 of the specification and shown in Figure 3, and in lines 17-19 on page 4 of the specification and shown in Figure 3, while the second insulation layer is disclosed in lines 13-15 on page 3 of the specification and shown in Figure 3.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claim 5 was rejected by the Examiner under 35 USC 112, second paragraph, as allegedly being indefinite, for failing to particularly point out and distinctly claim the subject matter of the invention. It is therefore first ground for rejection to be reviewed on appeal whether Claim 5 is rejectable under 35 USC 112.

Claims 3-6 and 10-13 were rejected under 35 USC 103(a) as being unpatentable under the U.S. patent to Baggermans in view of the U.S. patent to Nichols. It is therefore second ground to be reviewed on appeal whether Claims 3-6 and 10-3 are patentable in view of the combination of the references.

ARGUMENT

Arguments against first ground for rejection to be reviewed on appeal.

In connection with the Examiner's objection to Claim 5 as being indefinite, it is respectfully submitted that the meaning of the phrase "thickness that is chosen depending on the voltage maximally occurring between two layers of both discs" is disclosed at page 4, third paragraph. If the conductor strips are wound in an opposite sense according e.g. to Fig. 3 of the application, then the current enters e.g. through terminal 319 and leave the pole at terminal 320. As a result thereof, the electrical voltage is maximum (e.g. 500 V) between both terminals 319 and 320, and the second insulation layer 317 must, therefore, be adapted to withstand this maximum voltage.

If, however, the conductor strips are wound in a same sense, then the current enters e.g. at terminal 319, flows through the first disc, then through an additional connection to terminal 320 and from there through the second disc (see page 3, line 29 through page 4, line 4). In this case, the voltage difference between the outermost layers is much smaller, and the maximum voltage is half as great as the maximum voltage in the first example (i.e. e.g. 250 V between all pairs 1, 151 2, 152... up to 150, 300). Thus, in the second example a far weaker insulation layer can be provided.

Claim 5 is, therefore, intended to say that the thickness of the second insulation layer 317 must be chosen in accordance with the maximum voltages between two neighbored layers of the two (or more) discs, and it is definite contrary to the Examiner's opinion.

Arguments related to second ground for rejection to be reviewed on appeal.

In his rejection of the claims over the art the Examiner argued that Baggermans inherently discloses a connecting means between the first and second coil elements and inherently discloses the first and second coil elements having substantially the same number of layers, the magnetic core could be acting as a cooling element, and the claimed invention is disclosed in this reference except for the first and second coil elements being wound in an opposite sense. The Examiner stated that a specific opposite sense winding direction of the coil elements would have been an obvious design consideration for the purpose of facilitating manufacturing.

Appellants disagree with the Examiner's opinion. Nothing similar has been disclosed up to now in the prior art. An expert in the art could not easily find the design of the magnetic pole as claimed in Claim 10. Reference is made in this respect to page 4, second paragraph of the specification. It is described there that the claimed design, i.e. the opposite direction of winding in

combination with the electrical connection of the two inner layers 1, 151 (i.e. "at the core" as claimed) is not made for an easier manufacture (in fact it is obviously more complicated to provide a core with an opposite direction of winding instead of with a same direction of winding). The important improvement is the fact that because of the opposite direction of winding and the inner connection of the windings it is possible to provide both radial outer layers 150 and 300 with an electrical connection 319, 320 each. Thus, the current between the + connection and the – connection will flow in such a direction through the two discs that the magnetic fields generated thereby have the same directions. Otherwise the electrical design must be chosen as described in the paragraph bridging pages 3 and 4 of the specification.

It is, therefore, to point out that none of the references can provide any hint or suggestion for such an electrical arrangement.

It is therefore respectfully submitted that the Examiner's rejection of Claim 10 should be reversed and Claim 10 should be considered as patentably distinguishing over the art and should be allowed.

Claim 11 also defines the magnetic pole which is new over the prior art. Reference is made to page 3, second paragraph of the specification. It is disclosed there that it is not only advantageous to have the same magnetic flux

with the same current but also to have the same cross-sectional areas being responsible for dissipation. In a given magnet levitation vehicle the magnet poles (e.g. of the carrying magnets) have not only a given magnetic force but also a given space requirement. New Claim 11, therefore, guarantees that the new magnetic poles have largely improved heat discharge but also the same space requirements and magnetic forces.

None of the references even gives a hint or suggestion with respect to the design according to Claim 11. Therefore, the Examiner's rejection of Claim 11 should be also reversed and this claim should be considered as patentably distinguishing over the art and should be allowed.

Claim 12 substantially has the additional feature of the improved heat discharge. In this respect that the object underlying the present invention can not be compared with the television line transformer according to Baggermans. Further, Claim 12 is directed to a magnetic pole for a magnetic levitation vehicle, whereas Baggermans describes a transformer inherently including a closed core means 10 being comprised of two yokes 4 and 4' spaced and arranged in parallel and two connecting pieces whereas a magnetic pole for a magnetic levitation vehicle inherently includes a core open at both ends thereof as e.g. shown in Fig. 1 of the present application and the known art cited therein.

Because of the above the magnetic pole according to Claim 12 is inventive over the Baggermans patent even if also the known device has two discs which serve for completely another purpose, and Claim 12 should be allowed as well.

Claim 13 defines that a core

is used according to the present invention for the purpose of providing a magnetic pole having a better heat discharge instead of for a line transformer according to Baggermans.

It is believed that the rejection of Claim 13 should be reversed and Claim 13 allowed as well.

The patent to Nichols applied by the Examiner in combination with the Baggermans patent against Claim 3 does not disclose the new features of the present invention as defined in Claims 10-13.

The Examiner rejected the claims over the combination of the Baggermans and Nichols references as obvious. In connection with this it is respectfully submitted that none of the references disclose the new features of the present invention as defined in the independent claims. A person of ordinary skill in the art who familiarized himself with the teachings of the references would

not arrive at the present invention as defined in the independent claims, but instead he or she would have to fundamentally modify the basic concept of the references, and in particular by including into them the new features of the present invention which are now defined in Claims 10-13. However, it is known that in order to arrive at a claimed invention, by modifying the references the cited art must itself contain a suggestion for such a modification.

This principle has been consistently upheld by the U.S. Court of Customs and Patent Appeals which, for example, held in its decision In Re Randol and Redford (165 USPQ 586) that:

> Prior patents are references only for what they clearly disclose or suggest, it is not a proper use of a patent as a reference to modify its structure to one which prior art references do not suggest.

Also, the present invention provides for the highly advantageous results which cannot be accomplished by the devices disclosed in the reference. It is well known that in order to support a valid rejection the art must also suggest that it would accomplish applicant's results. This was stated by the Patent Office Board of Appeals, in the case Ex parte Tanaka, Marushma and Takahashi (174 UPSQ 38), as follows:

> Claims are not rejected on the ground that it would be obvious to one of the ordinary skill in the art to rewire prior art devices in order to accomplish applicant's

result, since there is no suggestion in prior art that such a result could be accomplished by so modifying prior art devices.

Claims 10-13 should be considered as patentably distinguishing from the prior art and should be allowed.

As for the dependent claims, these claims depend on Claim 10 and share its allowable features, and therefore they should be allowed as well.

The reversal of the Examiner's rejection of the claims, reconsideration of the present application, and allowance of the present application with all the claims currently on file is most respectfully requested.

Respectfully submitted,

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CLAIM APPENDIX

3. A magnetic pole according to Claim 10, wherein the radial outermost layers (150, 300) are provided with electrical connections (319, 320).

4. A magnetic pole according to Claim 10, wherein the two discs (315, 316) have the same number of layers (1 to 150 and/or 151 to 300).

5. A magnetic pole according to Claim 10, wherein the second insulation layer (317) has a continuous thickness that is chosen depending on the voltage maximally occurring between two layers of both discs (315, 316).

6. A magnetic pole according to Claim 10, wherein the radially innermost layers (1, 151) of said discs (315, 316) are electrically insulated against said core (301) by way of an insulation layer (321) wound around said core (301).

10. A magnetic pole for magnetic levitation vehicles, comprising: a core (301) acting as a cooling element; a winding (314) applied on said core (301), said winding (314) having at least two discs (315, 316) formed by conductor strips (306) wound in several individual layers (1...300) around said core (301); first insulation layers (310, 321) for electrically insulating said individual layers (1...300) radially against each other and against said core (301); and at least a second insulation layer (317) lying between said at least two discs

(315, 316) for electrically insulating said discs (315, 316) axially against each other, and

wherein the conductor strips (306) of one disc are wound in an opposite sense with respect to the conductor strips of a neighboring disc around the core (301) and electrically connected to each other at said core (301) by way of a connecting line (318).

11. A magnetic pole for magnetic levitation vehicles, comprising: a core (301) acting as a cooling element; a winding (314) applied on said core (301), said winding (314) having at least two discs (315, 316) formed by conductor strips (306) wound in several individual layers (1...300) around said core (301); first insulation layers (310, 321) for electrically insulating said individual layers (1...300) radially against each other and against said core (301); and at least a second insulation layer (317) lying between said at least two discs (315, 316) for electrically insulating said discs (315, 316) axially against each other, and

wherein said individual layers (1...300) have half a height (h) and twice a thickness (d) as compared with a magnetic pole having only one disc but substantially a same magnetic flux and space requirement.

12. A magnetic pole having improved heat exchange for magnetic levitation vehicles, comprising: a core (301) acting as a cooling element; a

winding (314) applied on said core (301), said winding (314) having at least two discs (315, 316) formed by conductor strips (306) wound in several individual layers (1...300) around said core (301); first insulation layers (310, 321) for electrically insulating said individual layers (1...300) radially against each other and against said core (301); and at least a second insulation layer (317) lying between said at least two discs (315, 316) for electrically insulating said discs (315, 316) axially against each other.

13. A magnetic pole for magnetic levitation vehicles, comprising a core (301) acting as a cooling element and having applied thereon a winding (314) with at least two discs (315, 316) formed by conductor strips (306) wound in several individual layers (1...300) around said core (301); first insultion layers (310, 321) for electrically insulating said individual layers (1...300) radially against each other and against said core (301); and at least a second insulation layer (317) lying between said at least two discs (315, 316) for electrically insulating said discs (315, 316) axially against each other, so that the magnetic pole has improved heat discharge for a magnetic levitation vehicle.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.